Ab.

42

20

ac.

2017

aa

68

Time: 3 hours

Full Marks : 100

Candidates are required to give their answers in their own words as far as practicable.

The questions are of equal value.

Answer any five questions.

 Find the rank coefficient of correlation from the following data:

Marks in Statistics Marks in Accountancy

chion(e) , 12	40
to fact of deviates	36
- encompando	30
to the state of th	44
boot collaborate	36
	กับเราะ เจาะเก็บวินุธ

XV-61/2

(Turn over)

A SHILL

Marks in Statistics Marks in Accountancy

40	32
56 709	45
60	42
Time: 3 hours 06	20
Full Marks : 100 66	36

2. The following data based on 450 students are given, for marks in Statistics at a cartain examination. Give the equations to the two lines of regression. Also estimate the average marks in Economics of the candidate who obtained 50 marks in Statistics:

	Statistics	Economics
Mean Marks(x)	40	48
Standard Deviation(σ)	12	16
Sum of the product	of deviation	s of marks from
their respective mea	ans:	8

The figures of output of a sugar factory are given below. Fit a straight line trend by the method of

XV-61/2 (2) Contd.

least squares and obtain the trend values:

	Year	Product	ion(000 Qnt)
30	2003	2016	77
nl gheris	2005 menoo	following	88t mor7
	2006		94 odmuN
year 2016	2007	. 610\$ may	85
icoxii lafol	2008	threap 3 lead	91 Foot and
1.62)	2009		98
	2012		90

4. Estimate the production for the year 2013 and 2015 with the help of the following data by binomical expansion method:

	Year		Production
edites another	2010	* testili	200
dect of a	2011		220
t salartavi	2012	twohis:	260
	2013	De noo	-emma seim
a o	2014	' × 35 =	350 (s) Y
XV - 61/2		(3)	(Turn over)

Year	Production
2015	neev — Vear
2016	800s 430

5. From the following construct Fisher's Index
Number:

	Base year 2010		Current year 2016	
Items	Price Per	Total Expenditure	Price Per	Total Expenditure
	Unit (Rs.)	(Rs.)	Unit (Rs.)	(Rs.)
Α	2	40	5	75
В	4 ·	16	8	40
С	1	10	2	24
D	5	25	10	60

- 6. (a) If ${}^{n}P_{5} = 20 \times {}^{n}P_{3}$, find the value of n:
 - (b) How many different words of 4 letters can be formed out of the letters of the word "PROBLEM"? How many words with at least three letters can be formed?

7. (a) Find n if
$${}^{n}P_{r} = 24 \times {}^{n}C_{r} = 24 \times {}^{n}C_{5}$$
.

XV - 61/2 (4) Contd.

- (b) Out of 5 ladies and 7 men a committee of 4 is to be formed. How many ways the committee can be formed if (i) there are 3 ladies and 1 man, (ii) there are 2 ladies and 2 men (iii) there are 4 ladies?
- 8. Prove that:

$$\begin{vmatrix} b+c & a-b & a \\ c+a & b-c & b \\ a+b & c-a & c \end{vmatrix} = 3abc-a^3-b^3-c^3.$$

9. A manufacturer sells three articles in the market of Ranchi and Patna as shown below. Find the total revenue from each city using matrix algebra:

City	A	В	C
Ranchi	10,000	15,000	30,000
Patna	9,000	15,000	20,000
Sales per unit	Rs. 3	Rs. 4	Rs. 2

- 10. Write short notes on any two of the following:
 - (a) Types and degrees of correlation

(b) Limitations of Index Numbers

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of Percentaged Extra residence colonia Find the

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- (c) Components of time feries
- (d) Difference between Correlation and Regression

Selesperunit (Selder Red 4 Red)

10. Write standard on any two of the following

(s) Types and degrees phoorefation

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